

REMARKS

This Amendment is submitted in response to the final Office Action mailed on November 8, 2007. No fee is due in connection with this Amendment. The Director is authorized to charge any fees which may be required, or to credit any overpayment to Deposit Account No. 02-1818. If such a withdrawal is made, please indicate the Attorney Docket No. 113184-119 on the account statement.

Claims 5-8 are pending in this application. Claims 1-4 were previously canceled without prejudice or disclaimer. In the Office Action, Claim 6 is objected to because of an informality. Claim 7 is rejected under 35 U.S.C. §112, second paragraph. Claims 5-8 are rejected under 35 U.S.C. §102. In response Claims 6 and 7 have been amended. These amendments do not add new matter. At least in view of the amendments and/or for the response set forth below, Applicants respectfully submit that the rejections should be withdrawn.

In the Office Action, Claim 6 is objected to because it recites that it is dependent upon canceled Claim 1. See, Office Action, page 2, lines 6-7. However, Claim 6 was treated as if it were dependent on Claim 5 for art rejection purposes. See, Office Action, page 2, line 8. In response, Applicants have amended Claim 6 to recite that it is dependent upon Claim 5.

Accordingly, Applicants respectfully request that the rejection of Claim 6 based on an informality be withdrawn.

In the Office Action, Claim 7 is rejected under 35 U.S.C. §112, second paragraph, as allegedly being indefinite. The Patent Office asserts that the claimed limitation of "the disc-shaped organic molecule" lacks sufficient antecedent basis. See, Office Action, page 2, lines 13-14. In response, Applicants have amended Claim 7 to eliminate the adjective of "disc-shaped" and instead recite "the organic molecule." The amendment is supported in the Specification at, for example, page 11, lines 9-14; page 13, lines 4-12. As Claim 6 recites, in part, an organic molecule having an anisotropy of a dielectric constant and including side chains each of which structure is changed under an application of electric field, Applicants respectfully submit that the current limitation of "the organic molecule" in Claim 7 has sufficient antecedent basis.

Accordingly, Applicants respectfully request that the rejection of Claim 7 under 35 U.S.C. §112, second paragraph, be withdrawn.

In the Office Action, Claims 5-8 are rejected under 35 U.S.C. §102(a) as anticipated by US 2002/0015131 A1 to Sato ("Sato"). Applicants respectfully submit that *Sato* fails to disclose

or suggest each and every element of independent Claim 5 and Claims 6-8 that depend therefrom.

Independent Claim 5 recites, in part, an element for modulating area comprising a system in which occupation area is changed by a molecular structure change induced by an electric field. In contrast, Applicants respectfully submit that *Sato* fails to disclose or suggest all the elements of independent Claim 5.

For example, *Sato* fails to disclose or suggest a system in which occupation area is changed by a molecular structure change induced by an electric field. The Examiner asserts that Figure 7 and its corresponding description in paragraph 81 of *Sato* disclose “a liquid crystal layer (201) changing shape when an electric field is applied.” See, Non-Final Office Action, page 3, lines 1-3. However, the portions of *Sato* cited by the Examiner merely disclose that “by changing an electric field applied to the liquid crystal layer 201, the alignment or orientation state of the rod-shaped liquid crystal 207 can be changed.” See, *Sato*, paragraph 81. Nothing in *Sato* discloses or suggests application of an electric field to induce a molecular structure change in accordance with the present claims.

The molecular structure change of the present claims is not a mere change in the orientation of multiple molecules but rather a change in the structure of an individual molecule. See, Specification, page 16, lines 3-20. The molecular structure change causes the spiral pitch of a molecule to expand or contract upon application of an electric field. See, Specification, page 16, lines 17-18. Moreover, the structural change induced by the electric field is such that the dielectric constant of the molecule changes. See, Specification, page 16, lines 20-21; page 17, line 1; Figures 1A-1C. In contrast, *Sato* is entirely directed to a liquid crystal device in which the application of an electric field merely causes a change in the alignment or orientation of multiple liquid crystal molecules. See, *Sato*, paragraphs 40-41, 81-84. For example, Figures 1A and 1B illustrate an edge-on and uniaxial alignment state of multiple discotic liquid crystal molecules. See, *Sato*, paragraph 29. An electric field may be applied to switch the liquid crystal molecules from an edge-on and uniaxial alignment state to other alignment states or between different phases of edge-on uniaxial alignment states. See, *Sato*, paragraph 40. However, nowhere does *Sato* discuss any structural changes to the individual liquid crystal molecules; *Sato* merely discloses use of an electric field to change the orientation state of multiple molecules within a liquid crystal. Therefore, *Sato* fails to disclose or suggest application of an electric field to induce a molecular structure change as required, in part, by the present claims.

Moreover, *Sato* fails to disclose or suggest an element for modulating area comprising a system in which occupation area is changed. As discussed previously, *Sato* is entirely directed to a device in which the application of an electric field merely causes a change in the alignment or orientation of multiple liquid crystal molecules. Nowhere does *Sato* disclose or suggest a device for modulating area comprising a system in which occupation area is changed. The Examiner cites Figure 7 and its corresponding description in paragraph 81 of *Sato* as support for a system in which occupation area is changed by a molecular structure change induced by an electric field. See, Non-Final Office Action, page 3, lines 1-3. However, the portions of *Sato* cited by the Examiner do not discuss use of an electric field to change the occupation area of a molecule but rather to change the alignment or orientation state of molecules of a liquid crystal. See, *Sato*, paragraph 81. In fact, the term "occupation area" is not used anywhere in *Sato*. Thus, Applicants respectfully submit that *Sato* fails to disclose or suggest a device for modulating area comprising a system in which occupation area is changed as required, in part, by independent Claim 5 and Claims 6-8 that depend therefrom.

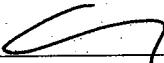
Accordingly, Applicants respectfully request that the rejection of Claims 5-8 under 35 U.S.C. §102(a) be withdrawn.

For the foregoing reasons, Applicants respectfully submit that the present application is in condition for allowance and earnestly solicit reconsideration of same.

Respectfully submitted,

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Date: February 19, 2008